CBRN Defense in the Objective Force:

Insights From Army Transformation War Game 2002

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On 20 April 2002, approximately 600 personnel from across the Army and the Department of Defense assembled at Carlisle Barracks, Pennsylvania, to participate in Army Transformation War Game 2002. This year's war game focused on the Army's missions, tasks, and capabilities within a joint context in the year 2020. Participants were divided among four major working groups: Caspian Basin, Sumesia (fictional state), homeland security, and the rest of the world. This article provides insights gained from the Caspian Basin (see map) with regard to the Objective Force; chemical, biological, radiological, and nuclear (CBRN) defense; and their implications on doctrine organizations, training, materiel, leadership and education, personnel, and facilities (DOTMLPF).

Scenario: *In January 2020, a fictional state, Anfar, invades Azerbaijan to seize a number of oil fields and a pipeline. The Azeri government requests support from the United Nations (UN), which in turn passes a UN Security Council Resolution. This resolution authorizes the formation of a combined joint task force (CJTF). Despite technological advances, the United States still depends heavily on foreign oil. Therefore, the CJTF is formed around an American Army corps and Azeri forces. The Russians and Turks, though members of the coalition, are not contributing forces but have agreed to allow the United States to utilize their ports, railways, and other critical infrastructure. Iran, an ally of Anfar, is poised along the Azeri border to intervene if necessary.*

In February 2020, elements of an Iranian mechanized division, disguised as peacekeeping troops, cross the border into Azerbaijan. The 23d Armored Cavalry Regiment (ACR), conducting a screen along the Azeri-Iranian border, engages the Iranian division and forces the Iranians to withdraw. Several hours after the initial attack, soldiers from the 23d ACR begin complaining of flu-like symptoms—high fever, chills, and headaches. Other soldiers are vomiting and have diarrhea. At the same time, the Iranian government announces that Iranian soldiers along the Azeri-Iranian border are exhibiting symptoms consistent with a biological attack and accuses the CJTF of violating the Biological Weapons Convention (BWC).

At the end of the day, CJTF and threat representatives meet to discuss what really happened and to assess the results. On 6 February 2020 at 0300,

the Iranians released approximately 50 pounds of staphylococcal enterotoxin B (SEB) from two unmanned aerial vehicles loitering over the Azeri-Iranian border. SEB is an incapacitating toxin that has no human vaccine for treatment. Symptoms persist for three to ten days. The Iranians employed the toxin in their effort to break contact with the 23d ACR. The Iranians accused the CJTF of violating the BWC to shift blame, gain international support, and potentially disintegrate the coalition. Representatives from the CJTF and the threat assessed that the 23d ACR was degraded to 60 percent combat effectiveness for ten days, after which, the soldiers returned to duty.

Although the above scenario occurred during a war game, there are several insights that can be gained from the vignette. First, sensors will be just as important in 2020 as they are today. However, future sensors must be more capable than current sensors in the number and types of hazards they can detect, the time required to detect a hazard, and the ability to detect hazards from stand-off distances.

Additionally, sensors must be integrated into the future combat system (FCS) during the system's engineering process to effectively preserve combat power, sustain operational tempo, and minimize casualties. They cannot be added as an afterthought. Sensor integration not only contributes to effective warning and reporting, but it also ensures that hazard information is directly inputted into the common operational picture via the command, control, computers, communications, intelligence, surveillance, and reconnaissance system. As situational awareness increases, survivability increases as well.

Finally, sensors must be lightweight. The FCS is constrained by weight and cubic meters because of transporting requirements. Currently, the FCS is constrained to 20 short tons or less to be C-130 transportable, thus supporting the needs of the combatant commanders.

Also, individual and collective protection is vital to protecting the force. In the past, protection has exclusively focused on countering the effects of chemical warfare agents (for example, nerve, blister, and blood). However, chemical warfare agents represent only a small fraction of the potential hazards a soldier may face. Toxic industrial chemicals, radiological material, toxins, materiel-eating microbes, and naturally occurring diseases pose a threat to U.S. troops as well.

Filters are not the panacea for Objective Force CBRN survivability. Many chemical compounds (for example, ammonia) can defeat carbon-based filters. Some environments, particularly subterranean, are oxygen deficient. Therefore, a combination of filters, overpressure, and rebreathers is necessary to protect soldiers and preserve combat power.

Decontamination has always been a labor- and resource-intensive operation. In the Objective Force, decontamination must be multifunctional and user friendly. For example, a Legacy Force heavy decontamination platoon consists of 20 personnel and 10 vehicles. Despite its size, the platoon is designed to perform vehicle and equipment decontamination only, not personnel, casualty, terrain, or fixed site. Additionally, the platoon requires significant augmentation.

In the future, a decontamination unit must be capable of multiple decontamination missions with fewer personnel. Initially, this concept would require a materiel solution. However, this concept impacts all DOTMLPF domains. For example, in the past, personnel decontamination was a unit's responsibility; however, Objective Force units will be much leaner than their Cold War predecessors and may not be able to decontaminate themselves.

In conclusion, the principles of CBRN defense-contamination avoidance, protection, and decontamination have endured and will endure until the Objective Force is fielded. Regardless of which technologies are incorporated into the FCS, the requirement to detect hazards, protect soldiers, neutralize hazards, and maintain situational understanding will persist. The fielding of the Objective Force will not eliminate the unseen hazards that populate the battlespace but will drive the Chemical Corps and the Army to seek out and harness new technologies that are more effective and more efficient than today's capabilities.